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The Case for 'Effector': Case Roles, Agents, and Agency Revisited

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INTRODUCTION

Although they may call them case roles, participant roles, thematic roles (θ-roles), thematic relations, proto-roles, or role archetypes, most current theories of grammar have some account of semantic roles and their relation to syntax. As Newmeyer (1986: 106) notes: 'Fillmore and the case grammarians deserve credit for impressing upon the linguistic community the importance of these roles.' Further, in all discussions of the 'semantic side' of grammar, beginning with Fillmore 1968 and Gruber 1965, 'agent' plays a central part. Since virtually every theory which incorporates a thematic-relations component invokes this role, its status as one of the vital elements in linguistic theory and description has gone largely unchallenged. The purpose of this paper is to argue against this view of agent as primary and pivotal and to show that agent, in the sense in which it has typically been used in recent linguistic theory, is a derivative notion which is not as essential to grammar as has previously been suggested. We will argue that it is better understood as being derived from the interaction of a number of morphosyntactic, lexical, semantic, and pragmatic factors which coalesce at the level of the contextualized interpretation of the utterance, and that the more basic role arising from verb semantics is what we call *effector*, roughly, the dynamic participant doing something in an event. This thematic relation underlies agent, force, and instrument, roles which are normally taken to be distinct but related in some way. Our goal is to demonstrate the basicness of the effector relation and to show how agent, force, and instrument interpretations derive from it.

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The discussion will proceed as follows. In Section 11.1 several different accounts of 'agent' will be briefly summarized and critiqued. In 11.2 the Role and Reference Grammar [RRG] (Van Valin, 1993) view of case roles in general and agent in particular will be presented, and it will be shown why the account given in earlier work in the theory is, like many of the proposals reviewed in 11.1, flawed. In 11.3 the theory of agent as a pragmatic implicature largely triggered by properties of the argument nominal in interaction with verb semantics is presented, starting from the revised RRG analysis of agent put forth in Holisky (1987), and the derivation of force and instrument as variants of the more basic relation of effector will be presented. Conclusions are given in 11.4.

It is important to recognize that all the work to be discussed in this paper has contributed in varied and substantial ways to our knowledge of the semantic side of grammar, and all of it owes a great debt, whether acknowledged explicitly or not, to the pioneering work of Fillmore on case, case roles, and lexical semantics.

11.1. VIEWS OF AGENTS, AGENCY, AND SEMANTIC ROLES

In this section we briefly outline the views of eight linguists with respect to the notion of agent, agency, and semantic roles. The main purpose is to present a representative overview of the different positions that have been taken as far as the semantics of 'agent,' and its role in grammar, are concerned. The primary focus of this overview is semantic, rather than syntactic, in nature, and so the summaries highlight the various semantic features that have been proposed as definitional for 'agents' and 'agency.' Where relevant, we also discuss various authors' views on issues which feature prominently in later sections of the paper. These other issues include the nature of causation, the notion of 'instrument,' the notion of 'force,' and the purpose of semantic roles.

For the purposes of this paper, post-Fillmorean approaches to case roles can be divided roughly into two groups. The first, the 'cognitivist' camp, is a much more homogeneous group, represented by such linguists as Talmy, Langacker, Croft, and DeLancey. Very generally, this group is associated with the following views:

(1) linguistic meaning is a property of mind, not objective reality;
(2) in the mind there is no independent level of linguistic semantics, since semantics is not distinct from basic cognitive structure (i.e. there is a level of cognitive structure, but no level of semantic structure);
(3) syntactic structure follows largely from cognitive structure;
(4) there is no significant distinction between semantics and pragmatics.

On top of this, the 'cognitivist' camp can be said to eschew strong formalism and have only the most general of schemas for lexical semantic representation.

By contrast, the 'semanticist' group is more heterogeneous, and members are primarily identified by their not sharing in some of the assumptions of the 'cognitivists.' In particular, the 'semanticists' are viewed as identifying a level of semantics independent of basic cognition and syntax and favoring strong formalism, with a richer system for lexical decomposition. This group includes Dowty, Jackendoff, and Ravin. While Jackendoff may seem a controversial inclusion, his conceptual-structure module, which is responsible for the creation and interpretation of language-specific lexical conceptual structures, and which takes input from other cognitive modules such as vision, counts in our terms as a clearly articulated independent level of semantics.

After reviewing Fillmore's original proposal, the 'semanticists' and the 'cognitivists' will be discussed in turn.

11.1.1. *Fillmore (and Case Grammar)*

In the context of 1960s Transformational Grammar, Fillmore's (1968) 'The Case for Case' was a radical shifting of theoretical gears. Its main purpose was to change the base component by replacing syntactically defined grammatical relations like subject and object, which Fillmore did not believe were cross-linguistically valid, with semantically defined case roles, like agent, which he believed were universal and probably innate. In his introduction to the paper, Fillmore writes (pp. 2–3):

> My paper will plead that the grammatical notion 'case' deserves a place in the base component of the grammar of every language. . . . what is needed is a conception of base structure in which case relationships are primitive terms of the theory and in which such concepts as 'subject' and 'direct object' are missing. The latter are regarded as proper only to the surface structure of some (but possibly not all) languages.

The paper was meant to demonstrate the viability of Fillmore's vision of a 'semantically justified universal syntactic theory'—a vision which would necessitate a drastic rethinking of the basic premises of TG. For Fillmore, it was (and remains) of importance that commonalities between languages be real and discoverable, rather than merely stipulated by theory, and a semantically driven deep structure seemed more viable for representing and explaining these commonalities than did a syntactically driven one. With regard to the nature of the Chomskian level of syntactic deep structure as it was construed in the immediately post-*Aspects* period, Fillmore (1968: 88) asserted:

> It is an artificial intermediate level between the empirically discoverable 'semantic deep structure' and the observationally accessible surface structure, a level the properties of which have more to do with the methodological commitments of the grammarians than with the nature of human languages.

It is in this theoretical context that Fillmore's frequently criticized use of the term 'case' is to be understood. Fillmore's 'case' properly resided in semantic deep structure as an inherent relationship between a verb (more precisely, a predicate) and the noun phrases (more precisely, the arguments) associated with it. Primitive case roles would not typically be easily identifiable by some overt surface morphosyntactic marking, but instead would need to be discovered using the same methods that Whorf had developed for discovering other covert categories. Fillmore thus introduced the distinction between case-marking (i.e. case forms) and (deep) case relations (i.e. case roles). He writes (1968: 21):

> We may agree, then, for our present purposes, with Hjelmslev, who suggests that the study of cases can be pursued most fruitfully if we abandon the assumption that an essential characteristic of the grammatical category of case *is expression in the form of affixes on substantives*. I shall adopt the usage first proposed, as far as I can tell, by Blake (1930), of using the term *case* to identify the underlying syntactic-semantic relationship, and the term *case form* to mean the expression of a case relationship in a particular language—whether through affixation, suppletion, use of clitic particles, or constraints on word order. [*Emphasis in original.*]

Fillmore has always been interested in investigating how natural languages reflect and relate to the way human beings construe their universe, and the basic case roles that he proposed were meant to capture 'certain types of judgements human beings are capable of making about the events that are going on around them, judgements about such matters as who did it, who it happened to, and what got changed' (p.24). For the purposes of our discussion we need only present the definitions he gives (pp.24–5) for three of his proposed set of cases, 'agentive', 'instrumental', and 'objective.'[1]

> *Agentive* (A), the case of the typically animate perceived instigator of the action identified by the verb.
>
> *Instrumental* (I), the case of the inanimate force or object causally involved in the action or state identified by the verb.
>
> *Objective* (O), the semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself; conceivably the concept should be limited to things which are affected by the action or state identified by the verb. The term is not to be confused with the notion of direct object, or with the name of the surface case synonymous with accusative.

Even at the outset there were questions about the appropriate characterization of *agentive*, even though, as we shall see, it is one of the more general characterizations in the literature. Fillmore (1968: 24) himself notes that '*typically* animate' is an unsatisfactory 'escape qualification,' which is used because of his 'awareness that contexts which I will say require agents are sometimes occupied by "inanimate" nouns.' The main features of this definition are *animacy*,[2] *instigation*, and *action*, and it is clear from Fillmore's discussion that his agentive case is as likely to be found with intransitive as with transitive verbs. Indeed, in recasting Sapir's typology of pronominal systems in Native American languages into his own framework, Fillmore basically highlights the issue of what has since come to be known as split intransitivity, and proposes that one set of intransitive verbs is associated with an underlying 'agentive' case (i.e. unergative verbs) while the other set is associated with an underlying 'objective' case (i.e. unaccusative verbs). Given that a number of later theorists identify 'agent' as one member in a binary opposition, it is worth pointing out that in Fillmore's characterization of the 'agentive' and 'objective' cases they are not treated as semantic opposites. Each is described in terms which are independent of the other.

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[1] Other cases originally proposed in Fillmore's (1968) paper are Dative (D), Factitive (F), and Locative (L). He acknowledged that this list was probably incomplete, and at various points in this paper he discusses other possible candidates.

[2] Fillmore eventually argued, in 'The Case for Case Reopened' (1977), that the problems inherent in using the notion of 'animacy' as definitional for cases were too great and it should be abandoned.

The notion of 'instrument' which Fillmore uses is also much broader than that of many linguists and covers forces, like *The wind* in *The wind opened the door*, as well as more prototypical instruments, like *the key* in *John opened the door with the key*. Instrument is not merely the inanimate version of agentive, since it, unlike agentive, is necessarily '*causally* involved in the action *or state*.'

One of the main premises of Fillmore's Case Grammar was that the case roles assigned to NPs remained constant through transformations. Thus, while the surface syntactic grammatical status of a particular NP may vary, its deep semantic role does not. Sentences like the following were used to illustrate this point (1968: 25).

(1*a*) John opened the door
(1*b*) The door was opened by John
(1*c*) The key opened the door
(1*d*) John opened the door with the key
(1*e*) John used the key to open the door

In these sentences, *John* remains the agent whether he is presented as subject (*a*, *d*, *e*) or in the *by*-phrase of a passive (*b*). Similarly, *the key* is always instrument, even though it is the subject of example (*c*), the object of example (*e*), and in a prepositional phrase in example (*d*). Finally, while the NP *the door* surfaces both as object (e.g. *a*, *c*, *d*, *e*) and as subject (e.g. *b*), it is always understood to manifest the objective case role.

The 1968 version of Case Grammar stipulated that every NP in a sentence could bear one, and only one, case role, and that predicates could not assign the same case role to different NPs in the sentence. In this respect, Fillmore had already formulated what became known in GB as the Theta-Criterion (Chomsky, 1981).[3] As a consequence of this assumption, it was possible to represent in the lexicon the set of case roles that the NPs associated with a particular verb could fill, since no case role would be repeated, and every NP would be associated with one of the designated case roles. These representations are the well-known case frames of Case Grammar. Verbs can differ as to whether a certain case role is obligatorily or optionally associated with it, and optional case roles were placed in parenthesis in the case frame. The case frame for the verb *open*, for example, was given as +[__O(I) (A)]. In other words, the case frame states that while the verb *open* may optionally assign agentive case, or instrumental case, or both, it must always occur with an NP manifesting objective case, and this can be the only NP that the verb occurs with. This case frame is based on the following example sentences.

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[3] Fillmore (1977) presents a modified version of this position which, like the Gruber–Jackendoff position, allowed arguments to take composite roles (e.g. agent-source with a verb like *sell*).

(2*a*) The door opened	[__O]
(2*b*) John opened the door	[__O + A]
(2*c*) The wind opened the door	[__O + I]
(2*d*) John opened the door with a chisel	[__O + I + A]

The above sentences can also be used to illustrate a further point of significance. Fillmore observed that for kernel sentences there was a preference as to which case role would appear at surface in subject position—what he called (1968: 33) the 'unmarked' subject choice. The rule he proposed is as follows:

> If there is an A, it becomes the subject; otherwise, if there is an I, it becomes the subject; otherwise, the subject is the O.

This is clearly an early version of the various thematic relations hierarchies proposed by a number of different theories. We can represent this particular hierarchy as follows:

agentive > instrumental > objective

With respect to the sentences in (2), Fillmore's rule correctly predicts that if the NP filling the objective case role is the only NP to occur with *open*, then it will be treated as subject (2*a*). However, if there is a second NP filling either the instrumental or the agentive case role, then this NP must occur as subject (2*b–d*). Finally, if there are three NPs, then it is the NP in the agentive case relation which appears as the subject (2*d*).

These, then, are the main features of Case Grammar as first outlined in Fillmore's foundational paper. Given that the current standpoint of a number of linguists, including the authors of this paper, would be that the attention to semantic considerations in case grammar was insufficient, there is a kind of irony in Fillmore's (1968: 88) statement that 'one criticism of case grammar that has been brought to my attention is that it is too strongly motivated by semantic considerations.' Although Case Grammar claimed that a complete lexical entry would contain the semantic representation of the meaning of a form, no attention was given to detailing the nature of these semantic representations, nor was there any clear suggestion as to how the case frames would relate to the basic semantic structure of verbs. Furthermore, the semantic nature of the case roles was never made completely clear. For instance, what precisely is meant by 'perceived instigator' in the definition of agentive case, and how would we identify the presence of this feature? Finally, there seem to be some questionable calls as far as the treatment of certain verbs are concerned. Is it really sufficient, or even accurate, to say that *kill* differs from *murder* in that *kill* requires that either an instrument or an agent be present, while *murder* requires an agent? Are *like* and *please* in fact nearly synonymous, and do they truly manifest the same case frame (i.e. +[__O + D])? Later, in his 1971 paper 'Some Problems for Case Grammar,' Fillmore noted that in many situations the determination of case roles was based on 'intuitive decisions,' and for a number of sentences his intuitions failed. While intuitions play an important role in semantic research, these intuitions must be validated by some other independent means. The above criticisms notwithstanding, the importance of Fillmore's Case Grammar is indisputable.

11.1.2. *'Semanticist' approaches*

Ravin (1990) argues strongly for a model of semantic representation which is fully independent of syntactic representation, and observes (p.32): 'owing to the absence of an independent level of semantic representation, Fillmore's Case grammar is inadequate in its representation of the semantic relations that hold between predicates and arguments.'

Decompositional Theory (DT), the model of semantic representation that Ravin adopts and expands, derives from Katz's theory of semantic decomposition. In this view, semantics is an autonomous level of grammar bounded on one side by pragmatics and on the other by syntax (1990: 113). It is claimed (p.117), although nowhere adequately substantiated, that the concepts utilized in the decompositions are 'universal semantic notions that are independent of the vocabulary of any particular language.' Given that thematic relations, or case roles, are by definition both semantic and syntactic in nature, they are deemed to be 'superfluous concepts' and rejected by Ravin. If 'agent' is in fact the conjunction of properties such as animacy, causation, and action, then, Ravin argues (pp.170–1), it can be represented by the semantic markers and tree of relations given in Fig. 11.1. A verb that contains this structure in its representation (e.g. *swallow*) might then be said to assign thematic agent, but, as Ravin correctly points out, very few verbs explicitly specify the conjunction of these properties (e.g. *put*, which does not require animacy, but is often said to take an agent). So, while the semantic content typically attributed to *agent* can be captured in Ravin's system, there is no evidence that this is an especially significant cluster of properties at the level of verb decomposition.

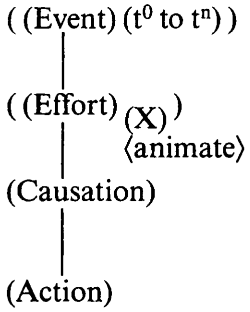

Fig. 11.1

Dowty (1991), by contrast, tackles the question of the theoretical status of thematic roles from the perspective of model-theoretic semantics. He investigates argument selection as a first strategy for gathering the kind of linguistic evidence appropriate for identifying role types correctly. As a methodological principle, he proposes (p.562) that only those semantic distinctions that can definitely be shown to be relevant to argument selection somewhere in some natural language can count as relevant data for the definition of role types. As a consequence of this position, it turns out that 'all roles are event-dependent in meaning' (p.564), but they never have discourse- or viewpoint-dependent meanings.

For Dowty, the most general notion of thematic role type, from the point of view of model-theoretic semantics, is 'a set of entailments of a group of predicates with respect to one of the arguments of each' (p.552). The entailments that he discusses derive directly from the meanings of nonlogical predicates (i.e. basic verbs), and are termed 'lexical entailments.'

Dowty goes on to argue that traditional approaches to thematic roles have failed because they attempt to treat the roles as discrete categories. He proposes, instead, that thematic roles are cluster concepts which allow different degrees of membership, and so are essentially prototypes evidencing membership and centrality gradience. Having taken this position, he goes on to claim that only two roles (i.e. two cluster concepts) are needed to account for argument selection, and these are dubbed *proto-roles*. These two proto-roles, 'proto-agent' and 'proto-patient,' are characterized by the independent verbal entailments (1991: 572) listed in Table 11.1.

TABLE 11.1.

Contributing properties for the agent proto-role	Contributing properties for the patient proto-role
volitional involvement in the event or state	undergoes change of state
sentience (and/or perception)	incremetal theme[4]
causing an event or change of state in another participant	casually affected by another participant
movement (relative to the position of another participant)	sationary relative to movement of another participant
(exists independently of the event named by the verb)	(does not exist independently of the event, or not at all)

An examination of the entailments for proto-agent reveals most of the same definitional features that are proposed for agents by other writers on this subject (i.e. volition, entailed animacy, causation, motion, and change in another entity). In order to head off the possible criticism that the above entailments are as unclear as the traditional thematic roles, Dowty (p.575) puts forward two weak arguments in support of his position. The first, and less satisfactory, is that these entailments are 'not any less clear' than traditional thematic roles. The second argument makes the grandiose, and difficult to prove, claim that the entailments 'are more straightforwardly relevant to human life.'

Although the proto-roles may be nondiscrete, Dowty (p.577) notes that verb meanings 'can be as precise as you like, with definite criterial definitions.' While he acknowledges that the position he argues for may be compatible with theories like RRG in which thematic relations are derived from argument positions in the logical structure of verbs, he remains sceptical as to whether his entailment properties can be derived from, or identified with, the primitive verbs of the logical structure definition.

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[4] 'Incremental theme' is a new role category proposed by Dowty to refer to the entity in a telic event which undergoes a definite change of state, and undergoes this change via distinguishable separate stages (1991: 567–571).

The fullest development of a theory of thematic relations in generative grammar is found in Jackendoff's work (e.g. 1972; 1976; 1983; 1990), which takes off from the proposals in Gruber (1965). Jackendoff (1976; 1990) proposes a theory of thematic relations in which semantic role notions are derived from decompositional representations of verbs rather than being independently existing relations which are assigned to verbs. Thus, to take a very simple example from Jackendoff (1976), in the representation GO (x,y,z), which would be used for a sentence like *The ball rolled from the table to the wall*, the x argument position defines the theme role, y the source role, and z the goal role. The definition of agent is rather more complex, as it involves both the basic 'motion tier' of roles, as in [CAUSE (w), GO (x,y,z)], and what he calls the 'action tier,' e.g. AFF (x,y), where AFF = 'affect', x = actor, and y = patient. He summarizes it as follows:

> To sum up the dissection of the notion Agent, we see that it breaks down into three semi-autonomous parts: doer of the action (first argument of AFF), volitional Actor (first argument of $\text{AFF}_{+\text{vol}}$), and extrinsic instigator (first argument of CAUSE).

Like other analysts, Jackendoff recognizes that agent involves the notions of doer, volition, and causer, and he also notes the importance of the lexical properties of the NP involved:

> there are plenty of verbs that require [+vol] Actors; some, like *die*, require [- vol] Actors. When a verb is unmarked for volitionality (like *roll*), an animate subject is preferably interpreted as volitional, although this preference is easily overridden by other information. Finally, if the Actor is inanimate, [- vol] must be selected for consistency. (1990: 129)

In claiming that a sentence like *Bill rolled down the hill* has three representations which differ at the level of their action tiers, i.e. *Bill* would be willful doer, nonwillful doer, and undergoer, it is not clear whether this is meant to be a claim about the conceptual structure of the English verb *roll* or the conceptual structure of the whole clause.

One issue that the 'semanticist' group does not adequately address is the nature of the interaction between the semantic level, the syntactic level, and the pragmatic level, and the type of information that each level provides. This leaves open the question of where some of the basic semantic features in their description come from, and allows the possibility that 'agent' could be viewed as a coherent (nonsuperfluous) notion that arises as a function of the interaction of these levels.

11.1.3. *'Cognitivist' approaches*

Talmy's work on semantic causative types (1976) and force dynamics (1988) has set the foundations for much of the work on semantic roles within the 'cognitivist' camp. His research program takes as its beginning point of focus the cognitive structure of complete conceptualizations of events before they are packaged into linguistic form. One of Talmy's goals is to investigate how a single conceptualization of an event can be differentially packaged within one language as well as cross-linguistically. Talmy views causation at its simplest as being non-agentive and as minimally involving two events, the causing event and the caused event. These two events could otherwise be viewed as autonomous events, but are crucially linked by a perceived causal relation to constitute a macro-event. To support the position that it is events, and not individuals, which cause other events, he notes (1976: 53) that while *The ball broke the window* can be paraphrased by *The window's breaking resulted from a ball's sailing into it*, it is not possible to simply say **The window's breaking resulted from a ball.* As for agency, he notes (1988: 9):

> The inclusion of an agent in a sentence, though often yielding a syntactically simpler construction, actually involves an additional semantic complex. An agent that intends the occurrence of a particular physical event, say, a vase's breaking, is necessarily involved in initiating a causal sequence leading to that event. This sequence must begin with a volitional act by the agent to move certain parts or all of his body, and this in turn leads either to the intended event or to a further event chain, of whatever length, that leads to it.

Thus, for Talmy, an agent is an entity whose volitional act initiated an intended causal sequence leading to a final intended event. From our perspective, it is very important that he does not claim that this conjunction of properties necessarily resides in one element or another of the linguistic structure. Agent in this view is at the level of unified conceptualization, or unified interpretation, and the individual properties that make it up may be distributed across distinct elements of the sentence or may be evoked pragmatically in context or may not be present in the linguistic signal or context at all. Talmy himself, however, does not indicate exactly how this constellation of features may correspond to elements of linguistic structure. A further aspect of Talmy's research is the observation that, cross-linguistically, the preferred syntactic pattern for representing agentive causation is to 'permit expression merely of the agent and of the final event,' while gapping out the details of the causal event. Talmy (this volume) has called this 'windowing of attention' and 'gapping of attention.' The insight is that, by a process we are calling *metonymic clipping*, the agentive NP stands in for the whole causing-event sequence, and the subevent that is highlighted in an utterance is the final result state intended by the agent.

DeLancey (1984; 1990*a*; 1990*b*; 1991), Langacker (1987; 1990) and Croft (1991) follow Talmy in recognizing that agentivity is to be understood 'in terms of its place in the model of causation and event structure' (DeLancey, 1990*a*: 312). Further, like Dowty, these three scholars argue for what is essentially a prototype treatment of agents and agentivity. However, while the characteristic properties of Dowty's proto-agent are extensional, those proposed by the 'cognitivists' are clearly intensional. Finally, all three take essentially the same position that, in the broadest sense, an agent will be identified as the ultimate identifiable cause in the cognitively structured set of causal events that are understood to be present in the scenario evoked by a clause. Croft (1991) and Langacker (1990) independently argue for a model of semantic roles based on the perceived energy flow within an event, and 'agent' is the ultimate source of energy. Within this model, Langacker sets up a hierarchy of archetypal roles that is almost identical to that proposed in Fillmore (1968) but is defined by the flow of energy along an action chain (1990: 238):

Agent > Instrument > Patient/Mover/Experiencer

So, in this view, the definition of the 'instrument' role is as the intermediate entity in a flow of energy from 'agent' to 'patient.'

While there are these similarities in the work of Langacker, Croft, and DeLancey, there are also differences, especially between Langacker and DeLancey. Within the theoretical framework of Cognitive Grammar which Langacker has developed, *role archetypes* replace the notion of case roles or thematic relations. Role archetypes differ from these other constructs in that they are considered to be 'part of our general conceptual apparatus' and are 'not viewed as being solely or specifically linguistic in nature' (1990: 236). These archetypes are said to organize our conception of events, and so at this level play a role in semantics which has consequences for grammatical packaging and morphosyntactic coding. Langacker (p.210) notes: 'Descriptions of these roles read very much like Fillmore's classic definitions of semantic "cases" (1968), and some of the same terms are appropriate, but I must emphasize that we are not yet talking about specifically linguistic constructs.'

The roles that Langacker (p.236) considers archetypal, on the basis of cross-linguistic significance, are agent, instrument, experiencer, patient, mover, and absolute. It is important to emphasize that these roles of Cognitive Grammar do not form an exclusive set of role conceptions; they are only meant to delineate the most salient points in the conceptual space devoted to framing events. The archetypal 'agent' role is considered to be in polar opposition to the 'patient' role, and is conceived of as 'a person who volitionally carries out physical activity which results in contact with some external object and the transmission of energy to that object' (p.210). In the prototypical scenario the 'patient' role is an inanimate object which absorbs the energy originally transmitted from the 'agent' and undergoes some change of state because of this.

DeLancey's earlier position was that prototypical agents were (ultimate) volitional acting causers (1984: 185). However, he (1990*a*) notes that this position was unable to accommodate certain natural language data, and identifies the attempt to characterize the agent prototype independently of other relevant constructs as the source of the problem. In its narrowest sense, an agent is the 1st person, since 'a volitional action represents the most elaborated possible version of a causal schema' and, thus, 'the full agentive prototype can be experienced only subjectively' (1990*b*: 146). However, to get to the broader (more minimalist) conception of 'agent', DeLancey (1991: 342–3) advocates that case roles be 'defined and assigned in terms of tightly-constrained event schemas, rather than being assigned with reference to the larger more amorphous scenarios found in the lexical semantics of verbs.'

The event schema which yields 'agent' is: Agent CAUSE Theme GOTO Loc. Within a localist model, this schema is identified as underlying almost any clause which has an encoded 'cause'. Taking on Croft's (1991) notion of 'agent' as the first cause ('autonomous cause'), DeLancey then argues that what have originally been considered 'instrument subjects' (e.g. *the key opened the door*), 'natural-force subjects,' and other inanimate subjects are 'agents.' This is because of DeLancey's controversial, and to our minds misguided, proposal that only one basic schema is manifested in any verb/clause and that 'all elements of a schema must be referred to in a clause which encodes that schema' (1991: 343). In the famous sentence *The key opened the door*, a causal schema is identified; such a schema must have a surface representative of 'agent,' and '[t]hat Agent can only be *the key*; there is no other candidate in the clause' (p. 348). DeLancey has completely abandoned Fillmore's insight that an entity can be seen to play a constant semantic role within an event, independent of the syntactic function of the NP that encodes it, and he has essentially turned Fillmore's view of the hierarchical nature of case-role accessibility to subject position into a hierarchy of accessibility of expressed causal entities to the 'agent' role in the basic causal-event schema.

Thus, we find, especially in DeLancey's approach, but also in that of Croft, a very stripped down notion of 'agent,' devoid of notions such as 'volition' or 'animacy.' But DeLancey fails to demonstrate how the factors he proposes interact to determine attributions of different degrees of agent and agentivity. In part, this may be a function of the fact that there is no means for representing anything but the grossest details of semantic structure. Moreover, he has never abandoned the position that some role called 'agent' plays a pivotal role in the characterization of grammar and in the understanding of of the similar notions such as 'natural forces' and 'instruments.' It is our contention that Talmy has the correct view of 'agent' as an important conceptual-level notion arising as a function of the total integration of information in a clause, and that the term 'agent' should be reserved for this; but a new role is needed in semantic structure (whose independent existence 'cognitivists' fail to recognize) to explain the facts that DeLancey and Croft use their stripped down notion of 'agent' to explain.

11.1.4. *Discussion*

Fillmore's (1968) paper set the foundations for much of the debate over semantic roles in general, and agent(ive) in particular. Are semantic roles primitive or derived? Are they discrete concepts or cluster categories? How many roles are there? Are they essentially semantic notions, or hybrid semantico-syntactic notions, or extralinguistic cognitive-conceptual structures, or mere figments of the analyst's imagination? If they are semantic notions, are their properties extensional or intensional? What is the proper way to characterize the relations between the event structure coded by verbs and the roles which are realized by NPs? Do the roles contribute to the interpretation of a clause, or do they arise as the function of the interpretation of a clause? Why do we need semantic roles anyway?

The positions presented above vary widely as to the answers they provide for these, and other, questions. However, all the authors, except Ravin, take some notion of agent to be crucial for the explanation of grammatical phenomena in natural languages. They also share the fact that whatever characterization of agent or agentivity they present, the properties identified tend to be a mix of prototypically nominal properties (e.g. animacy and volition) and prototypical event properties (e.g. activity and causation). Moreover, the primary interests of most of these authors has been to characterize verbs and/or event structures, pushing aside the question of the proper treatment of NPs and their contribution to the clause and to role interpretation. Finally, while many of the authors acknowledge similarities between agents, natural forces, and instruments, and opposition between agent and patient (undergoer), there is no fully accepted view as to the source of these similarities and how they are to be described.

If we were to amalgamate all the properties of agents or agentivity suggested by the above authors, the list would look very similar to the cluster of fourteen properties which Lakoff (1977: 244) isolates for prototypical uses of prototypical agent–patient sentences. This is significant, since his features are meant to cover a typical sentence type, not a particular role or verb type. As noted above, these properties can be divided into those which may be considered more 'entity'-related (i.e. NP-related) characteristics, as opposed to more event- or state-related (i.e. verb-related) characteristics. Thus, *singularity*, *definiteness*, *volition*, *animacy*, *responsibility*, *having perceptual faculties*, *self-controlling*, and *self-energetic* (i.e. energy source) may be seen as the entity-related properties often associated with 'agents,' while *activity (of agent)*, *causality*, *manipulation of body parts or instruments*, *movement*, *change of state (in patient)*, *spatio-temporal overlap between agent's activity and patient's change of state*, and *flow of energy from agent to patient* may be seen as the relevant event-related (or verb-related) properties.

11.2. THE VIEW FROM ROLE AND REFERENCE GRAMMAR

Role and Reference Grammar (RRG) (Van Valin, 1993) is in many respects a direct descendent of Fillmore's original Case Grammar, as many of its central features have antecedents in the 1968 model. RRG takes the same fundamental view of the nature of grammar: there is a direct mapping between the semantic representation and the syntactic structure, and case roles play an important part in the mapping. One difference between Case Grammar and RRG is that discourse pragmatics also has a crucial role in this mapping in RRG. In terms of specific features of the two theories, the Case Grammar 'S' rule, S → Modality + Proposition, is reflected in RRG in the distinct treatment of predicates, arguments, and adjuncts on the one hand and operators (e.g. tense, aspect, modality) on the other; it is also seen in the projection grammar representation of the clause, in which constituents (predicates, arguments, and adjuncts) are represented in one projection and operator categories are represented in another (see Johnson, 1987; Van Valin, 1990; 1993). The hierarchy of case roles underlying the subjectivalization and objectivalization rules in Case Grammar is the ancestor of the Actor–Undergoer Hierarchy and linking rules in RRG. In the original model there was no commitment to grammatical relations like 'subject' and 'object' as necessarily universal features of natural language, and the lack of universality of grammatical relations has been an important focus of research in RRG since its inception.[5]

In earlier work in RRG (e.g. Foley and Van Valin, 1984), the treatment of agent followed that in Dowty (1979), which was in turn derived from the analysis in Ross (1972). A fundamental feature of the RRG approach to case roles is the distinction between specific thematic relations like agent, theme, and patient, and generalized case roles called *semantic macroroles*. There are two macroroles, Actor and Undergoer, and each subsumes a number of specific thematic relations.[6] All case roles involve generalizations over the specific semantic properties of particular arguments with particular verbs, and this is illustrated in Fig. 11.2. Thematic relations such as experiencer are generalizations over the the cognizer arguments of cognition verbs like *think, believe*, and *know* on the one hand, and the perceiver arguments of perception verbs like *see, hear*, and *smell*. A macrorole such as actor is a further generalization across experiencer, agent, possessor, and other such roles. Finally, all these semantic contrasts are neutralized in syntactic grammatical relations.

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[5] Finally, on a rather different note, the original conversations which led to the development of RRG began during Thanksgiving dinner at Fillmore's house in 1974.

[6] Dowty's proto-roles bear a striking resemblance to RRG macroroles, as he himself acknowledges. There are, however, important differences between them. Proto-roles are not a 'status' or 'role' that an argument actually bears to a predicate; rather, they are clusters of properties of arguments which affect subject and object selection with verbs. To say that an argument is proto-agent is to say that it is the one that is to be realized as subject in a clause containing that verb; the only formal syntactic or semantic relation

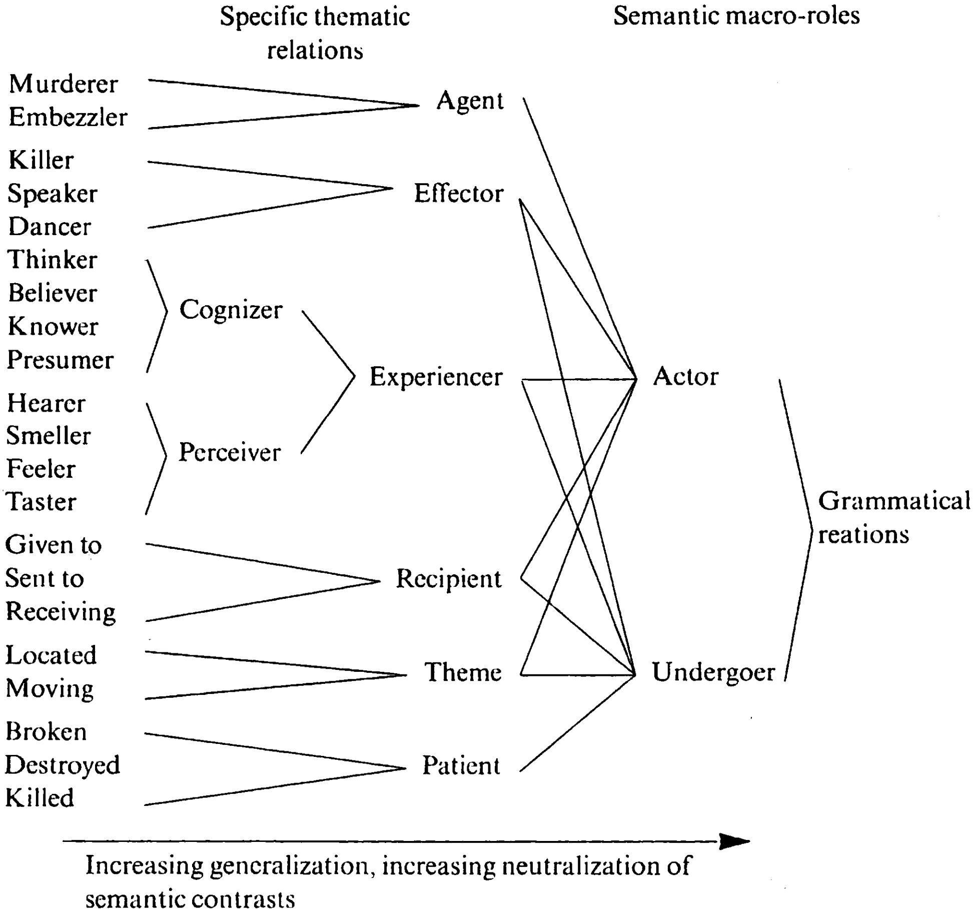

Fig. 11.2.

In the RRG decompositional system of lexical representation adapted from Dowty and the theory of semantic relations used, case

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that the argument has is that of subject. In RRG, on the other hand, macroroles are roles that arguments bear, and they are a central component of the system linking semantic and syntactic representations. In addition, macroroles are discrete categories, while proto-roles are not. See Van Valin (1993) for detailed discussion.

roles are derived from argument positions in lexical representations of verbs (following the general approach of Gruber, 1965, and Jackendoff, 1976), and agent is defined as the first argument of the abstract operator DO (originally proposed as an abstract higher predicate in Ross, 1972). In the continuum of thematic relations posited in RRG, agent anchors one endpoint and patient the other; it is considered the prototype thematic relation for the macrorole Actor.

Since DO is an abstract operator, it can co-occur with a number of different argument types, yielding a number of composite case roles. Examples are given in (3–6); only the relevant argument is discussed.

(3*a*)	John smiled (instinctively)	**smile**′ (x), x = effector
(3*b*)	John smiled (intentionally at the pretty girl)	DO (x, [**smile**′ (x)]), x = agent-effector
(4*a*)	The boy broke the window (accidentally)	[do′ (x)] CAUSE [BECOME **broken**′ (y)] x = effector
(4*b*)	He broke it (on purpose)	[DO (x, [**do**′ (x)])] CAUSE [BECOME **broken**′ (y)] x = agent-effector
(5*a*)	Mary slipped (on the ice)	**slip**′ (x), x = theme
(5*b*)	Mary slid (into second base)	DO (x, [**slip**′ (x)]), x = agent-theme
(6*a*)	The girl saw the picture	**see**′ (x, y), x = experiencer
(6*b*)	The girl looked at the picture	DO (x, [**see**′ (x, y)]), x = agent-experiencer

In this scheme, the fact that an argument is interpreted as an agent is represented in the lexical representation ('logical structure') of the verb by DO; if a verb may, but need not, take an agent, as with *smile* and *break*, then the two lexical entries can be unified by indicating that the DO is optional (cf. Foley and Van Valin, 1984: 97).

There are several problems with this approach to agents and agency. First, this scheme attributes the property of 'agency' entirely to the verb, when it in fact is related in part to properties of the NP argument. For example, if the relevant argument of *break* were inanimate, e.g. *the rock*, there would be no possibility of a DO interpretation, but if this is true, then it cannot be the case that being an agent is solely a verbal property. Moreover, in Van Valin (1993) it is argued that case roles (thematic relations) are nothing more than mnemonics for argument positions in lexical representations, and that they derive their semantic content entirely from these representations; hence they are not independent relations with their own meaning separate from the verbs they occur with. On this view, if agency is not entirely a lexical property of a particular verb, then it cannot be represented in the logical structure for that verb. Second, given the complexity surrounding the interpretation of agency, representing agent in the logical structure of the verb can lead to counterintuitive results. For example, in Foley and Van Valin (1984) it is argued that a sentence like *Joan broke the glass* has three different interpretations with respect to the issue of intention, volition, and control, all of which are central components of agency: (i) she could have accidentally done something and not intended for that action to lead to the breaking of the glass; (ii) she could could have done something intentionally but not intended for that action to lead to the breaking of the glass; and (iii) she could have intentionally done something and intended for her action to lead to the breaking of the glass. Each of these readings would require a different lexical representation for *break*, leading to a proliferation of logical structures for *break* in the lexicon, an unfortunate result, and it is not at all clear that these differences in interpretation should be a direct function of the lexical representation of a verb. Third, there is no account of the conditions governing when DO may or may not occur with a verb with which is it 'optional.' Fourth, the RRG system of lexical representation and semantic roles treats agent as being on a par with other case roles, e.g. effector, experiencer, theme, and patient, but this is in fact misleading: while there are arguments which are 'pure' effectors, themes, and experiencers, there are no 'pure' agent arguments, because agents are always *composite*, i.e. an agent is always also an experiencer, effector, theme, etc. Hence, unlike the other roles, agent is always a *secondary interpretation* added to other, lexically determined roles. Finally, the representations in (1–4) simply make the wrong predictions in some instances. For example, if the main difference between *see* and *look at* is agency, then *look at* + agency-cancelling adverbial should be equivalent to *see*, but this does not seem to be the case, as shown in (7).

(7*a*) Max accidentally looked at his neighbor's test and was accused of cheating ≠
(7*b*) Max saw his neighbor's test and was accused of cheating

It is important to note that many of the arguments given here to demonstrate problems with the original RRG approach to agents and agency are also applicable to a number of theories outlined in Section 1, most particularly that of Jackendoff. In addition, verbs which clearly take an agent argument, e.g. *murder*, do not easily co-occur with adverbs like *accidentally* or *inadvertently*, as in (10*b*) below; yet *look at* seems to quite readily, which suggests that its actor is not an agent like that of *murder*. There are thus serious problems with the account of agent and agency, like the one sketched here.

11.3. AGENTS, EFFECTORS, FORCES, AND INSTRUMENTS

11.3.1. *Agent as a pragmatic implicature*

In a very important paper, Holisky (1987) analyzes the coding of intransitive 'subjects' in Tsova-Tush (Bats) and proposes a radically different account of agent from those discussed in the previous two sections. On the basis of variable interpretation of the single argument of intransitive verbs as agentive or non-agentive, she puts forth the following claim:

> I would argue that the meaning of agent is often not a property of the semantic structure of the predicate at all. (It does not always correspond to the operator DO.) Agent interpretation often arises, rather, from the intersection of the semantics of the clause (the semantics of both the actor NP and the predicate) and general principles of conversation (cf. Grice, 1975). It particular, it derives from the pragmatic principle proposed in [8].
>
> [8] Pragmatic principle: You may interpret effectors and effector-themes which are human as agents (in the absence of any information to the contrary). (pp.118–19)

The basic insight of Holisky's analysis is that most verbs are simply unmarked for agency, and that the interpretation of an argument as an agent is a pragmatic inference or implicature and not an inherent property of the verb's semantic representation. Consider the examples in (9).

(9*a*) Larry killed the deer
(9*b*) Larry intentionally killed the deer
(9*c*) Larry accidentally killed the deer
(9*d*) The explosion killed the deer

The sentence in (9*a*) is neutral with respect to whether the actor is an agent or not; there is no explicit indicator to force an interpretation one way or another. In terms of (8), the default reading would be that of an agent. The default reading is confirmed in (9*b*) by the occurrence of the adverb *intentionally*. However, the addition of the agency-cancelling adverb *accidentally* in (9*c*) does not result in a contradiction of any kind; rather, it acts as 'information to the contrary' and cancels the inference in (8). In (9*d*) principle (8) cannot apply and the inference cannot arise, because the actor is inanimate. Hence, it must be concluded that a verb like *kill* does *not* have an agent argument in its semantic representation; rather, it has an effector argument which may be interpreted as an agent according to pragmatic principle (8).

There are verbs in English which have an agent in their semantic representation, but they are very few.[7] The prime example of such a verb is *murder*, whose actor must be an agent, and its logical structure would contain DO. With verbs such as these, the occurrence of an inanimate actor or the addition of an agency-cancelling adverb is either deviant semantically or at the very least highly marked.

(10*a*) Larry murdered his neighbor
(10*b*) *Larry inadvertently murdered his neighbor
(10*c*) *The explosion murdered Larry's neighbor

This approach avoids all the problems with positing agents in the semantic representation of most verbs noted in the previous section. First, it locates the agent reading for most verbs in the interaction of the lexical properties of the NP argument with the semantics of the verb in the context of the clause as a whole. Hence, the problem of a different semantic representation for every possible construal of agency in a clause simply does not arise. Second, it is no longer necessary to indicate that DO is optional with a verb; it occurs only with verbs which lexicalize agency, e.g. *murder*; with other verbs the agent interpretation is derived via principle (8). Third, the nature of agent as an overlay on lexically determined case roles is naturally captured. Finally, in the case of *see* and *look at*, the contrast between these two verbs would not be captured in terms of DO, since *look at* need not have an agentive experiencer, as (5*b*) shows, but rather in terms of the contrast between state and activity perception verbs. This would be represented as in (11).

(11*a*) State: *see* **see**′ (x, y) x = experiencer
(11*b*) Activity: *look at* **do**′ (x, [**see**′ (x, y)]) x = effector-experiencer[8]

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[7] Languages vary with respect to how often agency is lexicalized in verbs. For example, Hasegawa (1992) shows that Japanese verbs like 'kill' and 'break (transitive)' take true agent arguments, not simply effectors, unlike their English counterparts. Hence it appears that agency is lexicalized in more Japanese verbs than English verbs.

[8] *do*′ in the RRG system is a generalized activity verb, and it is completely neutral with respect to agency. Its first argument is an effector. Also, this representation should not be taken to be complete in any sense; it is merely intended to represent the contrast between the two types of perception verb.

One piece of evidence for this contrast comes from the following question–answer pair.

(12*a*) What is John doing?
(12*b*) He's looking at/*seeing the picture

The agent interpretation with perceptual activity verbs like *look at* and *listen to* derives via principle (8), just as with other activity verbs (or verbs containing an activity component in their logical structure, e.g. *kill*). There is no DO in their semantic structure.

An important facet of the context of the clause as a whole for the interpretation of agent is the grammatical construction(s) involved.[9] A grammatical construction may impose a particular interpretation on the effector argument which can lead to a strong agent reading or can preclude it. Two constructions with this property are causative and purposive constructions. In monoclausal causative constructions of the type found in many languages, e.g. French, Italian, Jacaltec, Japanese (but not English), the causee may or may not be interpreted as an agent, and this interpretation is often constrained by the morphological case it bears. The following French examples are from Hyman and Zimmer (1976) and the Bolivian Quechua examples are from Bills *et al.* (1969).

(13*a*) J'ai fait nettoyer les toilettes au général (French)
I-have made clean the toilets to.the general
'I made the general clean the toilets'
(13*b*) J'ai fait nettoyer les toilettes par le général
I-have made clean the toilets by the general
'I had the general clean the toilets'
(14*a*) Nuqa Fan-ta rumi-ta apa-ci-ni (Bolivian Quechua)
1SG Juan-ACC rock-ACC carry-CAUSE-1sg
'I made Juan carry the rock'
(14*b*) Nuqa Fan-wan rumi-ta apa-ci-ni
1SG Juan-INST rock-ACC carry-CAUSE-1sg
'I had Juan carry the rock'

In the (*a*) examples the causee (*le général* in (13), *Fan* in (14)) is not normally interpreted as an agent, whereas in the (*b*) examples it can be so understood. The only difference between the sentences in each pair is the case-marker borne by the causee NP, and so we may conclude that in the French opposition of *à* vs. *par* and Quechua opposition of ACC versus INST, *à* and ACC block the agent implicature based on (8), while *par* and INST permit it. These contrasts highlight another deficiency in the lexical representation system in (3–6): if agent were part of the lexical representation of the verb, then the causative constructions in (13*a*) and (14*a*) would involve changing the thematic relation of the causee (i.e. from agent to effector), while those in (13*b*) and (14*b*) would not. In the analysis proposed here, there is no change in the thematic relation of the causee at all; rather, the agent implicature is allowed in one case and blocked in the other.

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[9] RRG, like Fillmore's Construction Grammar (1988), recognizes grammatical constructions as central to linguistic analysis and description, but they differ quite substantially in terms of how constructions are to be analyzed and formally represented. See Hasegawa (1992) for a detailed presentation of how the two approaches can be integrated.

Purposive constructions require that the main clause subject want or intend for the situation in the purposive clause to come about, and therefore it forces an agent interpretation. Consider the following examples

(15*a*) John rolled down the hill
(15*b*) The ball rolled down the hill
(16*a*) John rolled down the hill in order to get to the road before the bikers got there
(16*b*) *The ball rolled down the hill in order to bounce into the lake

The first sentence in (15) is ambiguous with respect to whether *John* is an agent or not; the situation could be one in which he threw himself down the hill or one in which he tripped and fell. The (*b*) example is not ambiguous, by virtue of the inherent lexical content of the subject *ball*. Adding a purposive clause renders (*a*) unambiguous and (*b*) nonsensical, as the sentences in (16) show clearly. The interpretive requirements of purposive constructions are so strong that they can override the normal implications of the lexical meaning of a verb and impose an agentive interpretation where it would otherwise be impossible. This is exemplified in (17).

(17) Jesus died to save us from our sins

Die is often taken to be the prototype of a *patient*-taking verb, and yet in (17) it is occurring with a purposive clause, with its subject receiving a quasi-agentive reading. This is not an odd fact about English; in Tsova-Tush (Holisky, 1987) and Acehnese (Durie, 1985), the single argument of *die* can receive agent-marking in the context of religious martyrdom. It would be extremely *ad hoc* and unrevealing to say that there is a separate verb *die* which takes an agent rather than a patient argument and occurs only in the context of religious martyrdom; rather, it is clearly preferable to say that there is only one verb *die*, and that this interpretation is imposed by the purposive construction, just as in (16*a*).

There are, then, three factors in the determination of whether an argument will be interpreted as an agent: the lexical semantic properties of the verb, the inherent lexical content of the NP argument, and the grammatical construction in which the verb and NP co-occur. In terms of lexical semantic properties of verbs, those with an activity predicate in their logical structure admit an agentive interpretation for their actor more readily than those without one; in other words, activity/accomplishment > achievement > state.[10] The factor of inherent lexical content of the NP is extremely complex; the major parameters involved are summarized in Fig. 11.3.[11]

The fundamental insight in this figure is that there are at least two competing, and interlinked, hierarchies of properties which can be used to predict whether the referent of a particular NP is likely to be conceived of, and/or treated, as an agent in an actional event. From left to right, along the top, the properties delineate what is essentially an animacy hierarchy. In this hierarchy, for instance, *+human* implicates, but does not entail, *rational*, which in turn implicates *intentional*, which in turn implicates *volitional*, and so on. In the philosophical and linguistic literature, *volition* has a diverse range of characterizations, but for our purposes it is a property of entities which manifest non-conscious basic acts of will (such as a baby crying for milk). *Intention*, on the other hand requires consciousness of wills, and ability to plan, and *rationality* adds to these components that the entity is knowledgeable about what the resulting consequences of its acts will be. If we compare the two sentences *The looter broke the window* and *The baby broke the window*, we can see directly the effect of these entity

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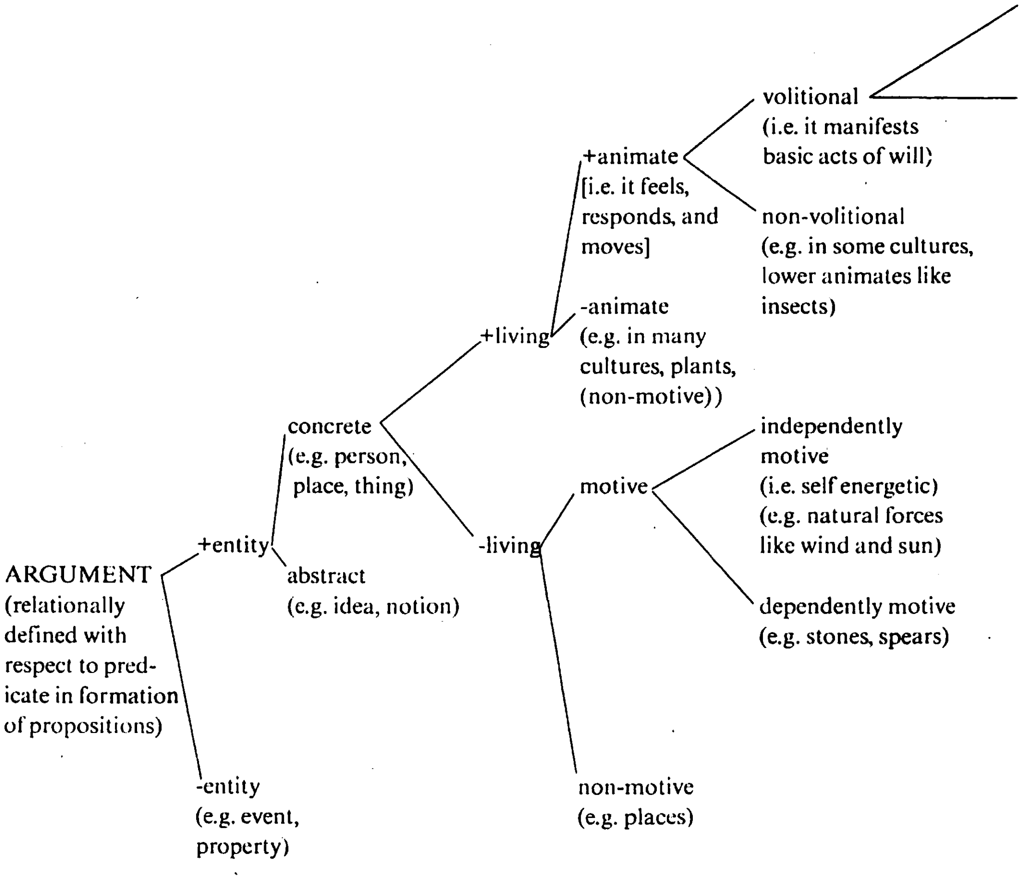
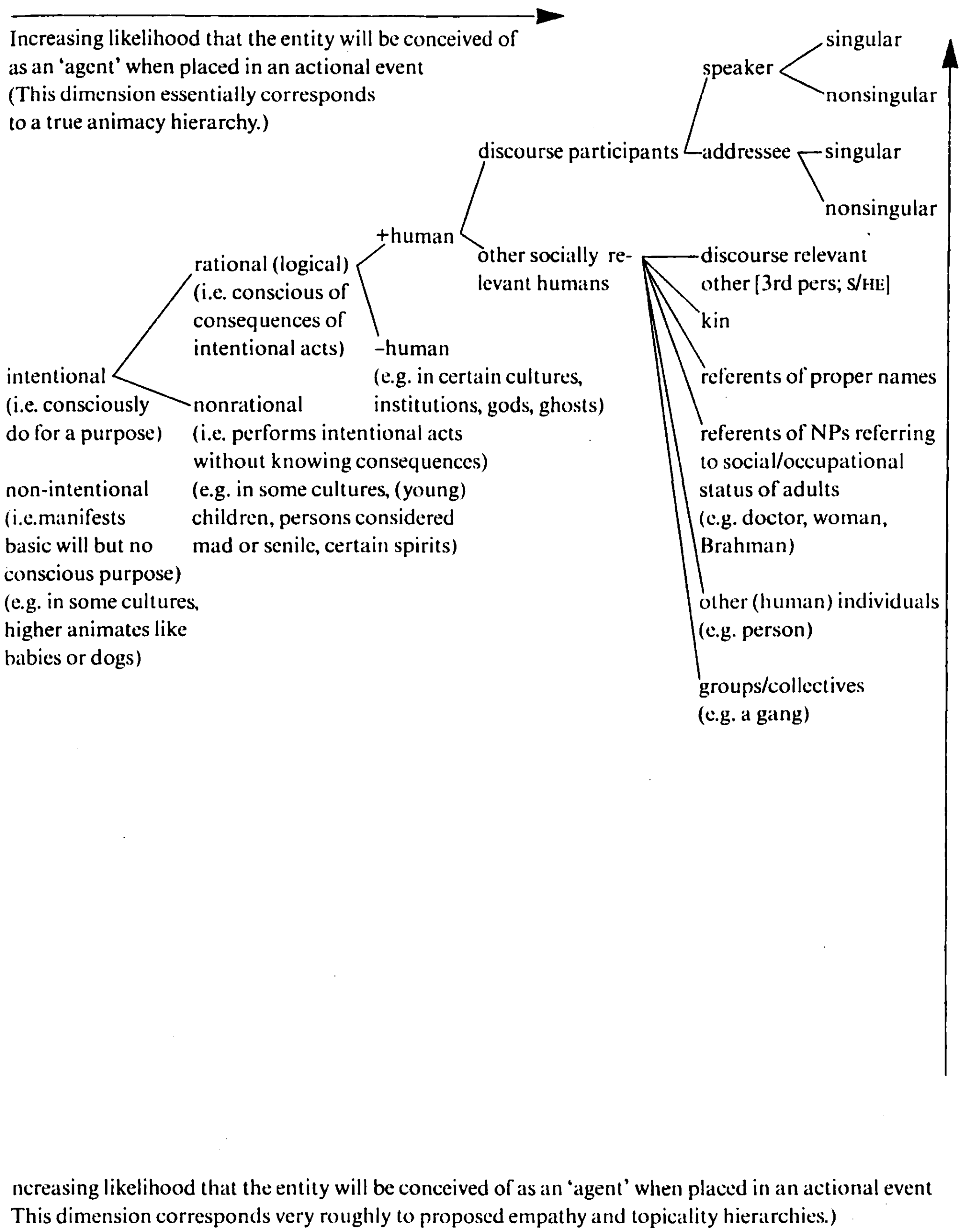
[10] Achievements outrank states here because there are achievement verbs which are inchoate activities, e.g. Georgian *amγerdeba* 'start singing' (Harris, 1981) or Hausa *ruugàa* 'start running' (Abdoulaye, 1992).

[11] This figure originally appeared in Wilkins (1990). There it was argued that many of the basic properties that are identified here correspond to semantic primitives proposed by Wierzbicka (1988; 1992). 'Speaker' corresponds to Wierzbicka's (1992) 'I,' 'addressee' to 'you,' 'other socially relevant humans' to 'someone,' '+entity' to 'something,' '+animate' to something which can 'feel' and 'do,' 'volitional' to 'want,' 'intentional' to something which can 'thing' and/or 'say,' and 'rational' to something which can 'know.' We would suggest that Wierzbicka include a primitive 'move' or 'go' which corresponds to 'motive' in this schema. It should also be acknowledged that the hierarchical sets of features given here has been heavily influenced by Silverstein (1976; 1981).

Typology of Argument Properties
Relevant to 'Agency' Assignments
in Natural Languages
(i.e. an overview of dependency relations amongst the semantically encoded or entailed properties of certain nominals/nouns which can detemine distinct morphosyntactic/grammatical treatments in different natural languages)


ARGUMENT
(relationally defined with respect to predicate in formation of propositions)
+entity
-entity
(e.g. event, property)
concrete
(e.g. person, place, thing)
abstract
(e.g. idea, notion)
+living
-living
+animate
[i.e. it feels, responds, and moves]
-animate
(e.g. in many cultures, plants, (non-motive))
volitional
(i.e. it manifests basic acts of will)
non-volitional
(e.g. in some cultures, lower animates like insects)
motive
non-motive
(e.g. places)
independently motive
(i.e. self energetic)
(e.g. natural forces like wind and sun)
dependently motive
(e.g. stones, spears)


Increasing likelihood that the entity will be conceived of as an 'agent' when placed in an actional event (This dimension essentially corresponds to a true animacy hierarchy.)
speaker
singular
nonsingular
discourse participants
addressee
singular
nonsingular
+human
other socially relevant humans
discourse relevant other [3rd pers; S/HE]
kin
referents of proper names
referents of NPs referring to social/occupational status of adults (e.g. doctor, woman, Brahman)
other (human) individuals (e.g. person)
groups/collectives (e.g. a gang)
rational (logical) (i.e. conscious of consequences of intentional acts)
-human (e.g. in certain cultures, institutions, gods, ghosts)
intentional (i.e. consciously do for a purpose)
nonrational (i.e. performs intentional acts without knowing consequences) (e.g. in some cultures, (young) children, persons considered mad or senile, certain spirits)
non-intentional (i.e.manifests basic will but no conscious purpose) (e.g. in some cultures, higher animates like babies or dogs)
ncreasing likelihood that the entity will be conceived of as an 'agent' when placed in an actional event This dimension corresponds very roughly to proposed empathy and topicality hierarchies.)

properties on the canonical interpretation of agency in the sentence. Although both sentences can be modified by *accidentally*, showing that there is no entailment that the act was intentional, the default interpretation of the sentence with the noun *looter* is that this person is a true intentional and rational agent who broke the window on purpose. The semantics of *looter* is such that it entails a human entity who willfully, intentionally, and rationally breaks into places in order to destroy things and take the things they want; thus agency is strongly implicated by the co-occurrence of this noun and the verb 'break.' *Baby*, by contrast, refers to an entity that is too young to look after itself and to do things on its own, and may, therefore, be considered nonrational, and non-intentional. So it is not surprising that the default interpretation of *The baby broke the window* is that the baby accidentally instigated the act, and so is not considered a 'true' agent.

In the vertical dimension, two entities may be of the same animacy type, but will be differentiated in terms of their ability to trigger agency attributions when occurring in an actional context, because they differ in some vaguer notion of 'experiential salience.' More 'experientially salient' entity notions tend to be higher on the vertical axis. The type of notion we are trying to get at can be exemplified by the fact that *rock* and *tornado* are both nonliving, physical entities, but *tornado* is more likely to be treated like an agent in an actional event, because it is independently motive (i.e. has its own energy source). The tornado is not more animate than the rock, it just happens to share one of the properties which also characterizes animates, self-movement (self-energetic). Similarly, the first person is no more animate than the second person, but, as DeLancey (1990*b*) and Langacker (1990) suggest, one can be sure of one's own volition, intention and rationality, but not of that of another person's. As noted in Section 11.1.3, DeLancey (1990*b*: 146) suggests that 'the full agentive prototype can be experienced only subjectively.' This vertical dimension might be best described using Langacker's (1990: 248) proposal that such hierarchical organization in the attribution of agency could be explained by an empathy hierarchy which he describes as reflecting 'a person's assessment of his relation to other sorts of entities.' It should also be pointed out that, at least for the human entities, the vertical hierarchy closely corresponds to proposed topicality hierarchies.

Finally, the influence of grammatical constructions on the interpretation of an argument as an agent is significant, but it has not been explored in the same depth as the other two factors. This is an important topic for future investigations.

11.3.2. *The derivation of instrument and force from effector*

It has been argued throughout this paper that agent, force, and instrument are but allo-roles of the more basic role of effector, and in the previous section we showed how agent derives from effector for most verbs. In this section, the nature of force and instrument will be investigated.

Forces are inanimate effectors which share two crucial properties with human and animate effectors: they are capable of independent motion and action, and they are not subject to the control of another effector, animate or inanimate. In terms of Fig. 11.3, they are [concrete, –living, motive]. Wind, rain, storms, floods, earthquakes, and lightning act on their own, without any kind of external instigation. Moreover, forces instigate causal chains which can have an intermediate effector, e.g. *The storm did most of its damage with its large hail and high winds.* Instruments lack both of these properties: they are inanimate entities which are not capable of independent motion or action and are subject to the control of another effector. Even where they appear to be the first segment in a causal sequence, e.g. *The rock broke the window*, the sentence must be understood to have an unspecified instigator which caused the rock to come into contact with the window, be it a boy, the wind, or a truck tire.[12]

The RRG system of logical structure representations make it possible to capture the distinction between instigator effectors and non-instigator effectors in a straightforward way. Consider the accomplishment logical structure in (18).

(18) [[**do**′ (x)] CAUSE [**do**′ (y, [...])]] CAUSE [BECOME **pred**′ (z)]

In (18), effector *x* induces an action by *y*, which may be unspecified (if the second argument of the second *do*′ is unspecified (as indicated by Ø)) or which may be 'come into contact with *z*' if this argument is

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[12] The view of instrument presented here is consistent with the first three components of Wierzbicka's (1980: 6–7) candidate for a universal definition of the 'instrumental case': something happened to Y/because something happened in IN/because X did something. Thus, something happened to the window (it broke), because something happened to the rock (it moved through the air), because the boy/the wind/the truck tire did something (threw the rock/blew it through the air/flicked it from the ground into the air).

[BECOME *be-at′* (z,y)], or which may represent a different event, and this sequence in turn induces a change of state in *z*. The 'come into contact with' event is the canonical case of a manipulated instrumental entity in a causal sequence. In Section 11.1.3 we introduced the term *metonymic clipping*, which is explicitly represented in these logical structures by a Ø in the second argument position of the first **do′**. Some examples of forces and instruments with their logical structures are given in 19.[13]

(19*a*) The typhoon destroyed the village
(19*a′*) [[**do′** (typhoon, Ø)] CAUSE [**do′** (Ø, Ø)]] CAUSE [BECOME **destroyed′** (village)]
(19*a″*) *[[**do′** (Ø, Ø)] CAUSE [**do′** (typhoon, Ø)]] CAUSE [BECOME **destroyed′** (village)]
(19*b*) The boy broke the window with the rock
(19*b′*) [[**do′** (boy, Ø)] CAUSE [**do′** (rock, [BECOME **be-at′** (window, rock)]]] CAUSE [BECOME **broken′** (window)]
(19*c*) The rock broke the window
(19*c′*) [[**do′** (Ø, Ø)] CAUSE [**do′** (rock, [BECOME **be-at′** (window, rock)]]] CAUSE [BECOME **broken′** (window)]
(19*c″*) *[[**do′** (rock, Ø)] CAUSE [**do′** (Ø, Ø)]] CAUSE [BECOME **broken′** (window)]
(19*d*) The boy broke the window
(19*d′*) [[**do′** (boy, Ø)] CAUSE [**do′** (Ø, Ø)]] CAUSE [BECOME **broken′** (window)]
(19*e*) The terrorists destroyed the car with a bomb
(19*e′*) [[**do′** (terrorists, Ø)] CAUSE [**do′** (bomb, [BECOME **exploded′** (bomb)]]] CAUSE [BECOME **destroyed′** (car)]
(19*f*) The bomb destroyed the car
(19*f′*) [[**do′** (Ø, Ø)] CAUSE [**do′** (bomb, [BECOME **exploded′** (bomb)]]] CAUSE [BECOME **destroyed′** (car)]
(19*f″*) *[[**do′** (bomb, [BECOME **exploded′** (bomb)])] CAUSE [**do′** (Ø, Ø]] CAUSE [BECOME **destroyed′** (car)]

A force argument, then, is the inanimate but independently motive effector of the first CAUSE in a causal sequence, while an instrument is the inanimate effector-theme (it is both the first argument of **do′**, which defines effector, and the second argument of **be-at′**, which defines theme) which occurs as in the second argument of the first CAUSE in a causal sequence. We could define the notion of 'instigator' as the effector of the first CAUSE in a causal sequence. Note that this is not a thematic relation like effector or theme but rather a label for a subclass of effectors. The contrast among agent, force, and instrument may be summarized as in (20).

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[13] The expanded logical structures proposed herein follow the program of richer lexical decomposition for RRG outlined in Van Valin and Wilkins (1993).

(20*a*) Agent: animate (preferably human), effector (preferably instigator)
(20*b*) Force: inanimate (motive), effector, instigator
(20*c*) Instrument: inanimate (nonmotive), effector, non-instigator

One consequence of this analysis is that force arguments only occur in causal sequences; that is, *the wind* is a force in *The wind blew down the tower* but not in *The wind is blowing briskly*, in which it is merely an effector. NPs like *the bomb* in (19*e*, *f*) are instruments, not forces, in this analysis; while they may have their own energy, they are not independently motive and must be planted by an instigating effector. Examples with *bomb* are misleading, due to the nature of the noun; the same causal structure can be seen in the pair *The pranksters stunk up the classroom with the rotten eggs* and *The rotten eggs stunk up the classroom*, in which the instruments have no real independent energy which makes it seem that they are somewhat force-like. The characterization of instrument in (20*c*) applies equally to less prototypical instances of instrument, as in e.g. *The woman looked at the parade with binoculars*, in which *binoculars* is not part of a causal sequence but is simply an accessory. In the prototypical case, however, the instrument is an effector-theme, as in (19*b*).

11.4. CONCLUDING REMARKS

We have argued that, contrary to the conventional wisdom of the field, agent is not a basic or fundamental semantic role at all and that very few verbs actually lexically require an agent argument. Rather, most of the relevant verbs take effector arguments which may under the appropriate circumstances be interpreted as an agent in the context of the sentence as a whole. The reason that agent has seemed to be so important and so prevalent is that most verbs denoting actional situations take effector arguments, and these arguments are very often human; given this high frequency of human effectors in action sentences, the default interpretive principle in (8) yields sentences with subjects interpreted as agents. When we dissect the notion of agent, to use Jackendoff's appropriate phrase, we find that in the vast majority of these cases the actual lexical requirement of the verb is that its subject be a doer (effector) and not necessarily an agent. This has important implications for the notion of an 'agent prototype' and the idea that relations like force and instrument are just 'less good' members of the category of which agent is the central member. The features in question do not in fact define a prototype, but rather constitute the relevant information on the basis of which the agent implicature is made. Moreover, force and instrument are not variants on agent at all but rather are variants of the effector role which underlies agent as well. All three roles are doers which differ in certain crucial ways along the dimensions of the lexical properties of the NP and their position in the causal sequence defined by the verb.

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